TECHNICAL WORK MAY NOT BEGIN PRIOR TO CO APPROVAL NASA/GODDARD SPACE FLIGHT CENTER REQUEST FOR TASK PLAN / TASK ORDER CONTRACTOR Billing Charles and a gel selection de la constant de la c NAS5-TASK NO. AMENDMENT 99124 QSS Group, Inc. 563-616-31-81-89 98 TASK TITLE: (NTE 80 characters; include Project name) **GOES Electrical Power System Engineering Services** ATTEMATED AND STREET ASSISTANT TECHNICAL REPRESENTATIVE (OR TASK MONITOR) ORG CODE MAIL Thomas Yi 563 563 301-286-5070 **BRANCH HEAD** CODE PHONE Marlon Enciso 563 301-286-5845 CONTRACTING OFFICER'S TECHNICAL REPRESENTAT CODE 301-286-2285 FLIGHT HARDWARE, CRITICAL GSE OR SOFTWARE? CONTRACTING OFFICER'S QUALITY REP DESIGNATED FAM: [X] NO [] YES Larry Moore The contractor shall identify and explain the reason for any deviations, exceptions, (To be completed by Contracting Officer) or conditional assumptions taken with respect to this Task Order or to any of the C.O. Requested Quote on: technical requirements of the Task Order Statement of Work and related specifications. Date: APR 1 9 1999 The contractor shall complete and submit the required Reps and Certs. Contractor will develop specification or statement of work under this task for a future procurement. [X] NO [] YES Flight hardware will be shipped to GSFC for testing prior to final delivery. [] NO Government Furnished Property/Facilities: [X] NO [] YES -- SEE LIST OF GFP (offsite only) / FACILITIES (onsite only) Onsite Performance: If yes: [] NO [X] YES [X] TOTAL [] PARTIAL If partial, indicate onsite work in SOW by asterisk (*) Surveillance Plan Attached: [X] NO [] YES Highlighted Contract Clauses: (to be completed by Contracting Officer) Per Clause H.14, Task Ordering Procedure, subparagraph (f), the effective date of this task order shall be May 3, 1999. INCENTIVE FEE STRUCTURE (check one) (See Contract NAS5-99124, Attachment K, Incentive Fee Plan) X_ No. 1 No. 4 No. 2 No. 3 No. 5 Cost 10% 50% 25% 25% % Schedule 15% 25% 25% 50% % Technical. 75% 25% 25% 50% (To be completed by Contracting Officer) The target cost of this task order is \$ 91,905 The target fee of this task order is \$ 5,974 The total target cost and target fee of this task order as contemplated by the Incentive Fee clause of this contract is \$ 97,879 The maximum fee is \$ 8,731 The minimum fee is \$0. AUTHORIZED SIGNATURES OF THE STATE OF THE ST Lorrie L. Eakin Contracting Officer SIGNATURE OF CONTRACTING OF TYPED NAME OF CONTRACTING OFFICER CONTRACTOR'S ACCEPTANCE AUTHORIZED SIGNATURE DATE

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Applicable paragraphs from contract Statement of Work:

STATEMENT OF WORK: (Continue on blank paper if additional space is required)

The contractor shall provide the necessary engineering services to assist the Power Systems Branch in the technical oversight of the GOES Electrical Power System (EPS). This technical purview shall include spacecraft electrical power systems and associated flight interface and associated ground support equipment, and instrument power system development and verification. The contractor shall have knowledge of the EPS, including batteries, and solar cells/arrays. The contractor shall have knowledge of ground integration procedures and electrical power system preparation procedures leading to spacecraft launch. The contractor shall be familiar with operations aspects of the EPS.

The contractor shall:

- 1. Monitor power system design, integration, test activities, and pre-launch activities, including battery reconditioning for the GOES EPS.
- 2. Participate in all working meetings and teleconferences in the Branch, the Project, at the GOES Prime Contractor, and at the Subcontractor facilities on issues related to the GOES EPS.
- 3. Review and provide recommendations on all EPS related problem reports, waivers, and deviations.
- 4. Report to the Branch and to the GOES Project on a weekly basis regarding the status of the GOES EPS.
- 5. Provide copies of written correspondance (memos and e-mail) between himself and the Project/Prime Contractor/ Subcontractor on GOES EPS to the ATR.

(CONTINUED)

PERFORMANCE SPECIFICATIONS:

All plans and procedures under this task are to be produced using industry standard practice.

APPLICABLE DOCUMENTS:

Evaluation and input to be based on all applicable GOES Spacecraft Performance and Verification Documents.

12/31/99 TASK END DATE:

MILESTONES/DELIVERABLES AND DATES:

Weekly Status Reports Summary Report on EPS Issues/Status

Monthly Reports Launch Site Activity Report GOES Spacecraft Review Summary Report Copies of Written Correspondance

Weekly to ATR and GOES Project Initial status report within 2 days to ATR. Final Report within 7 days after Closure to ATR. Monthly to ATR Within 7 days after each Launch Site activity event Within 14 days after Review Completion Within 5 days of issuance

PERFORMANCE STANDARDS:

On-time delivery of the above Schedule: Technical: ATR's acceptance of the above

FINAL DELIVERY DESTINATION (NAME, BLDG, ROOM):

Thomas Yi, Building 20, Room 154

TECHNICAL WORK MAY NOT BEGIN PRIOR TO CO APPROVAL

NASA/GODDARD SPACE FLIGHT CENTER

REQUEST FOR TASK PLAN / TASK ORDER

QSS Group, Inc.

NASS
99124

TASK NO. AMENDMENT

12

STATEMENT of WORK (Continued)

- 6. Communicate with the ATR within 2 days whenever a problem is surfaced that could affect the performance, schedule or cost of the EPS.
- 7. Attend all GOES spacecraft reviews such as Program Status Review, Pre-Ship Review, Launch Readiness Review, etc.
- 8. Meet or communicate regularly (biweekly, at minimum) with GOES Prime Contractor personnel to ascertain current status of the EPS and assist in resolving any open issues.
- 9. Provide a monthly summary of his activities to the ATR.
- 10. Provide EPS launch site support on site for the GOES-L launch at KSC.
- 11. Provide operations support for GOES spacecraft.
- 12. Review and analyze flight battery/cell performance and cell life cycle test results.
- 13. Analyze flight solar array power output predictions and review performance test results.
- 14. Evaluate power system electronics performance under steady state and dynamic load conditions such as determination of potential for lockup and instability.
- 15. Monitor the design and improvement to the Sounder and Imager power supply electronics design.
- 16. Monitor the growth in power demand by instruments and subsystems to determine the impact on achieving power system energy balance at mission end-of-life.
- 17. Investigate in-flight power system anomalies and failures on spacecraft that share design commonality with the GOES EPS to prevent such occurrences during the GOES mission.